

WE CLAIM:

1. A method of identifying at least one unknown energy driver, the method comprising:
receiving quantity metadata and energy usage data;
determining at least one relationship between the quantity metadata and energy usage data by analyzing the quantity metadata and energy usage data;
assessing the quality of the at least one relationship;
identifying the at least one energy driver from the quantity metadata contributing to the determined at least one relationship; and
outputting the identified at least one energy driver.
2. The method of claim 1, further comprising receiving a time interval, and further wherein the determining further comprises determining the at least one relationship within the time interval.
3. The method of claim 1, wherein the quantity metadata relates to production levels.
4. The method of claim 1, wherein the quantity metadata relates to production schedules.
5. The method of claim 1, wherein the quantity metadata relates to process variables.
6. The method of claim 1, wherein the determining comprises a linear regression analysis.
7. The method of claim 1, wherein the determining comprises a multivariate regression analysis.

8. The method of claim 1, wherein the determining comprises using at least one of algebraic formulae, fuzzy logic, genetic algorithms, fuzzy cognitive maps, and an expert system.
9. The method of claim 1, wherein the determining comprises searching only quantity metadata and energy usage data that are not ratiometrically linked.
10. The method of claim 1, wherein the outputting comprises outputting at least one of a relationship graph and a plain language description of the energy driver.
11. A system for identifying unknown energy drivers in an energy distribution network, the system comprising:
an energy drivers application, the energy drivers application having:
an input module operative to receive quantity metadata and energy usage data;
a processing module coupled with the input module and operative to determine at least one relationship by analyzing the quantity metadata and energy usage data, the processing module being further operable to assess the quality of the at least one relationship and identify the at least one energy driver from the quantity metadata contributing to the determined at least one relationship; and
an output module coupled with the processing module and operative to output the identified at least one energy driver.
12. The system of claim 11, further comprising a network coupled with the input module, and operative to transmit said quantity metadata and energy usage data to said input module.
13. The system of claim 12, further comprising at least one IED coupled with said network and operative to generate and transmit said energy usage data to said the input module of said energy drivers application via said network.

14. The system of claim 12, further comprising at least one measuring device coupled with said network and operative to generate and transmit said quantity metadata to said network.
15. The system of claim 11, wherein the input module is further operative to receive a time interval, and further wherein processing module is operative to determine the at least one relationship in the time interval.
16. The system of claim 11, wherein the quantity metadata relates to production levels.
17. The system of claim 11, wherein the quantity metadata relates to production schedules.
18. The system of claim 11, wherein the quantity metadata relates to process variables.
19. The system of claim 11, wherein the processing module is further operative to determine the at least one relationship by analyzing the quantity metadata and energy usage data using a linear regression analysis.
20. The system of claim 11, wherein the processing module is further operative to determine the at least one relationship by analyzing the quantity metadata and energy usage data using a multivariate regression analysis.
21. The system of claim 11, wherein the processing module is further operative to determine the at least one relationship by analyzing the quantity metadata and energy usage data using at least one of algebraic formulae, fuzzy logic, genetic algorithms, fuzzy cognitive maps, and an expert system.

22. The system of claim 11, wherein the processing module is further operative to determine the at least one relationship by searching only quantity metadata and energy usage data that are not ratiometrically linked.
23. The system of claim 1, wherein the output module is further operative to output at least one of a relationship graph and a plain language description of the energy driver.
24. A system for identifying unknown energy drivers in an energy distribution network, comprising:
 - means for accepting quantity metadata and energy usage data;
 - means for determining at least one relationship by analyzing the quantity metadata and energy usage data;
 - means for assessing the quality of the at least one relationship;
 - means for identifying the at least one energy driver from the quantity metadata contributing to the determined at least one relationship; and
 - means for outputting the identified at least one energy driver
25. An energy drivers application implemented on a computer, the computer having a processor and a memory coupled with the processor, the energy drivers application comprising:
 - first logic stored in the memory and executable by the processor and operable to accept quantity metadata and energy usage data;
 - second logic stored in the memory, executable by the processor and coupled with the first logic, and operable to determine at least one relationship by analyzing the quantity metadata and energy usage data, the third logic being further operable to assess the quality of the at least one relationship and identify the at least one energy driver from the quantity metadata contributing to the determined at least one relationship; and
 - third logic stored in the memory, executable by the processor and coupled with the second logic, and operable to output the at least one energy driver.

26. An energy drivers application for use in an energy distribution network, comprising:
- an input module operative to accept quantity metadata and energy usage data;
 - a processing module coupled with the input module and operative to determine at least one relationship by analyzing the quantity metadata and energy usage data, the processing module being further operable to assess the quality of the at least one relationship and identify the at least one energy driver from the quantity metadata contributing to the determined at least one relationship; and
 - an output module coupled with the processing module and operative to output the identified at least one energy driver.